Amendments to the Specification

Please replace the paragraph beginning at page 6, line 13, with the following amended paragraph.

The present invention may be utilized in combination with various materials, methods, systems, apparatus, etc. as described in various U.S. patent applications identified below, all of which are incorporated by reference in their respective entireties. They include U.S. Patent Application Serial Nos. 60/533,162, filed on December 30, 2003; 60/533,178, filed on December 30, 2003; 10/896,392, filed July 22, 2004 (now U.S. Patent No. 7,658,994); 10/713,174, filed November 14, 2003 (now U.S. Patent No. 7,169,933); 10/987,522, filed November 12, 2004 (now U.S. Patent No. 7,179,923); 10/714,053, filed November 14, 2003 (now U.S. Patent No. 7,361,767); 10/987,075, filed November 12, 2004 (now U.S. Patent No. 7,423,155); 60/533,171, filed December 30, 2003; 10/960,491, filed October 7, 2004 (now U.S. Patent No. 7,399,609); 60/533,177, filed December 30, 2003; 60/533,176, filed December 30, 2003; [[_____,]] 11/015,166, filed December 17, 2004 (abandoned) ~~titled "Method of Enhancing Signal Detection of Cell-Wall Components of Cells", filed on even date herewith (Attorney Docket No. 59467US002)~~; [[_____,]] 11/015,399, filed December 17, 2004 ~~titled "Soluble Polymers as Amine Capture Agents and Methods", filed on even date herewith (Attorney Docket No. 59995US002)~~; [[_____,]] 11/015,543, filed December 17, 2004 (now U.S. Patent No. 7,402,678) ~~titled "Multifunctional Amine Capture Agents", filed on even date herewith (Attorney Docket No. 59996US002~~; PCT Application No. [[_____,]] PCT/US2004/042793, filed December 17, 2004 ~~titled "Estimating Propagation Velocity Through A Surface Acoustic Wave Sensor", filed on even date herewith (Attorney Docket No. 58927WO003)~~; PCT Application No. [[_____,]] PCT/US2004/042663, filed December 17, 2004 ~~titled "Surface Acoustic Wave Sensor Assemblies", filed on even date herewith (Attorney Docket No. 58928WO003)~~; PCT Application No. [[_____,]] PCT/US2004/042455, filed December 17, 2004 ~~titled "Detection Cartridges, Modules, Systems and Methods", filed on even date herewith (Attorney Docket No. 60342WO003)~~; and PCT Application No. [[_____,]]

PCT/US2004/042382, filed December 17, 2004 ~~titled "Acoustic Sensors and Methods", filed on even date herewith (Attorney Docket No. 60209WO003)~~.

Please replace the paragraph beginning at page 11, line 30, with the following amended paragraph.

U.S. Patent Application No. [[_____,]] 11/015,166, filed December 17, 2004 ~~titled "Method of Enhancing Signal Detection of Cell Wall Components of Cells", and filed on even date herewith (Attorney Docket No. 59467US002)~~, describes the use of lysing as one method of fractionating a target biological analyte that may be used in connection with the present invention.

Please replace the paragraph beginning at page 13, line 19, with the following amended paragraph.

Examples of some suitable mass-modification techniques may be, e.g., the use of fibrinogen in combination with staphylococcus as described in, e.g., U.S. Patent Application Serial No. 60/533,171, filed on December 30, 2003 and U.S. Patent Application Serial No. 10/960,491, filed on October 7, 2004 (now U.S. Patent No. 7,399,609).

Please replace the paragraph beginning at page 18, line 6, with the following amended paragraph.

Some immobilization technologies that may be used in connection with the systems and methods of the present invention may be described in, e.g., U.S. Patent Application Serial Nos. 10/713,174, filed November 14, 2003 (now U.S. Patent No. 7,169,933); 10/987,522, filed on November 12, 2004 (now U.S. Patent No. 7,179,923); 60/533,162, filed on December 30, 2003; 60/533,178, filed on December 30, 2003[[,]]; 10/896,392, filed on July 22, 2004 (now U.S. Patent No. 7,658,994); 10/714,053, filed on November 14, 2003 (now U.S. Patent No. 7,361,767); 10/987,075, filed on November 12, 2004 (now U.S. Patent No. 7,423,155); [[_____,]] 11/015,399, filed December 17, 2004 (now U.S. Patent No. 7,342,082), ~~titled~~

~~"Soluble Polymers as Amine Capture Agents and Methods", filed on even date herewith (Attorney Docket No. 59995US002);~~ [[_____,]] 11/015,543, filed December 17, 2004 (now U.S. Patent No. 7,402,678), ~~titled "Multifunctional Amine Capture Agents", filed on even date herewith (Attorney Docket No. 59996US002);~~ and PCT Application No. [[_____,]] PCT/US2004/043382, filed December 23, 2004 ~~titled "Acoustic Sensors and Methods", filed on even date herewith (Attorney Docket No. 60209WO003).~~

Please replace the paragraph beginning at page 19, line 29, with the following amended paragraph.

In some embodiments, the mass-modifying agent 22 may preferably be a chemical fractionating agent such as, e.g., one or more enzymes, hypertonic solutions, hypotonic solutions, detergents, etc. In place of fractionating, the agent 22 may be add mass through the use of particle attachment to the target biological analyte or the mass-modifying agent ma be used to cause a detectable change in a physical property based on the presence (or absence) of one or more target biological analytes in the test specimen. For example, the agent 22 may be, e.g., fibrinogen in a system/method such as that discussed in, e.g., U.S. Patent Application Serial No. 60/533,171, filed December 30, 2003 and U.S. Patent Application Serial No. 10/960,491, filed on October 7, 2004 (now U.S. Patent No. 7,399,609).

Please replace the paragraph beginning at page 21, line 9, with the following amended paragraph.

Examples of techniques and means for driving and monitoring acousto-mechanical sensors (as delay lines devices, resonators, etc.) such as those that may be used in connection with the present invention may be found in, e.g., U.S. Patent Nos. 5,076,094 (Frye et al.); 5,117,146 (Martin et al.); 5,235,235 (Martin et al.); 5,151,110 (Bein et al.); 5,763,283 (Cernosek et al.); 5,814,525 (Renschler et al.); 5,836,203 ((Martin et al.); and 6,232,139 (Casalnuovo et al.), etc. Further examples may be described in, e.g., Branch et al., "Low-level detection of a Bacillus anthracis simulant using Love-wave biosensors on 36°YX $LiTaO_3$," Biosensors and

Bioelectronics (accepted 22 August 2003); as well as in U.S. Patent Application Serial No. 60/533,177, filed on December 30, 2003 and PCT Application No. [[_____,]] PCT/US2004/042793, filed December 17, 2004 ~~titled "Estimating Propagation Velocity Through A Surface Acoustic Wave Sensor", filed on even date herewith (Attorney Docket No. 58927WO003).~~

Please replace the paragraph beginning at page 23, line 22, with the following amended paragraph.

Although two exemplary systems that may be used in connection with the present invention are discussed above, various components that may be well-suited to use in such systems will now be described in more detail. Those components include, e.g., an exemplary detection cartridge depicted schematically in FIG. 3. One example of a sealed module that may be used in connection with, e.g., the detection cartridges, is depicted in connection with FIGS. 11A & 11B. The sealed module may be used to store and/or introduce various components such as fractionating/disassembly agents, magnetic particles, reagents, wash buffers, etc. into systems of the present invention. PCT Application No. [[_____,]] PCT/US2004/042455, filed December 17, 2004 ~~titled "Detection Cartridges, Modules, Systems and Methods", filed on even date herewith (Attorney Docket No. 60342WO003),~~ may describe additional features of detection cartridges and/or modules that may be used in connection with the present invention.

Please replace the paragraph beginning at page 24, line 23, with the following amended paragraph.

Also depicted in FIG. [[1]] 3 is a connector 254 that may preferably be operably connected to the sensor 250 to supply, e.g., power to the sensor 250. The connector 254 may preferably supply electrical energy to the sensor 250, although in some embodiments the connector may be used to supply optical energy or any other form of energy required to operate the sensor 250. The connector 254 may also function to connect the sensor 250 to a controller or other system that may supply control signals to the sensor 250 or that may receive signals from

the sensor 250. If necessary, the connector 254 (or additional connectors) may be operably connected to other components such as valves, fluid monitors, temperature control elements (to provide heating and/or cooling), temperature sensors, and other devices that may be included as a part of the detection cartridge 210.

Please replace the paragraph beginning at page 26, line 18, with the following amended paragraph.

In the exemplary embodiment depicted in FIG. 3, the flow front control features may preferably be provided in or on the opposing surface 260. This may be particularly true if the sensor 250 relies on physical properties that may be affected by the shape and/or composition of the detection surface, e.g., if the detection surface is part of a sensor that relies on acoustic energy transmission through a waveguide that forms the detection surface or that lies underneath the detection surface. Discontinuities in physical structures or different materials arranged over the detection surface may, e.g., cause the acoustic energy to propagate over the detection surface in a manner that is not conducive to accurate detection of a target analyte within the detection chamber [[30]] 230. Other sensor technologies, e.g., optical, etc., may also be better-implemented using detection surfaces that do not, themselves, include physical structures or combinations of different materials to control fluid flow front progression within a detection chamber.

Please replace the paragraph beginning at page 35, line 27, with the following amended paragraph.

Examples of some potentially suitable methods of attaching acousto-mechanical sensors within a cartridge that may be used in connection with the present invention may be found in, e.g., U.S. Patent Application Serial No. 60/533,176, filed on December 30, 2003 as well as PCT Patent No. [[_____,]] PCT/US2004/042663, filed December 17, 2004 ~~titled~~

~~"Surface Acoustic Wave Sensor Assemblies", filed on even date herewith (Attorney Docket No. 58928US004~~.

Please replace the paragraph beginning at page 37, line 28, with the following amended paragraph.

Referring to FIGS. 8A & 8B, an alternative structure using a porous membrane 1474 to control fluid flow rate into a waste chamber is depicted. The opening 1472 includes a series of orifices 1471 formed through the material of the housing. The opening 1472 may preferably include a ~~chamfer~~ chamber 1473 to preferably assist in fluid flow through the opening 1472 by avoiding a sharp edge that may inhibit flow into and through the opening 1472 (alternatively, radiused, rounded or smoothed edges, etc. could be used).

Please replace the paragraph beginning at page 45, line 11, with the following amended paragraph.

One exemplary embodiment of a module 880 that may be used to deliver reagents and/or other materials in accordance with the present invention is depicted in the cross-sectional views of FIGS. 10A & 10B. The depicted exemplary module 880 includes multiple chambers in housing 895, each of which may contain the same or different materials and each of which may preferably be hermetically sealed from each other. It may be preferred that the module 880 be designed such that the materials within the different chambers mix as they are introduced to each other.

Please replace the paragraph beginning at page 46, line 3, with the following amended paragraph.

FIG. 10B depicts a dispensing operation in which the plunger 881 is in transit from the loaded position of FIG. 10A to the unloaded position. In FIG. 10B, the tip 883 has pierced seal 885 such that the materials in chambers 884 and 886 can contact each other and mix. It may be preferred that chamber 884 contain a liquid 890, e.g., water, saline, etc. and that chamber [[686]]

886 contain a dried-down reagent [[692]] 892 (e.g., a lysing agent, fibrinogen, etc.), with the liquid 890 causing the reagent 892 to enter into a solution, suspension, mixture, etc. with the liquid 890. Although reagent 892 is depicted as being dried-down within chamber 886, it may be located in, e.g., a powder, gel, solution, suspension, or any other form. Regardless of the form of the materials in the chambers 884 and 886, piercing or opening of the seal 885 allows the two materials to contact each other and preferably mobilize within module 880 such that at least a portion can be delivered out of the module 880.

Please replace the paragraph beginning at page 46, line 15, with the following amended paragraph.

As the plunger 881 is advanced towards the exit port 882, the tip 883 also preferably pierces seal 887 such that the materials 894 in the chamber 888 can preferably contact the materials 890 and [[692]] 892 from chambers 884 and 886.

Please replace the paragraph beginning at page 49, line 25, with the following amended paragraph.

Further descriptions of systems and data analysis techniques that may be used in connection with the present invention (to provide, e.g., means for driving sensors and/or means for analyzing data from the sensors) may be described in, e.g., U.S. Patent Application Serial No. 60/533,177, filed on December 30, 2003, and PCT Patent No. [[_____,]] PCT/US2004/042793, filed December 17, 2004 ~~titled "Estimating Propagation Velocity Through A Surface Acoustic Wave Sensor", filed on even date herewith (Attorney Docket No. 58927WO003)~~. Other data analysis techniques to determine the presence (or absence) of target biological analytes using sensors of the invention may also be sued, e.g., time domain gating used as a post-experiment noise reduction filter to simplify phase shift calculations, etc. Still other potentially useful data analysis techniques may be described in the documents identified herein relating to the use of acoustic sensors. Although systems and methods related to the use

of surface acoustic wave sensors are described therein, it should be understood that the use of these systems and methods may be used with other acousto-mechanical sensors as well.

Please replace the paragraph beginning at page 50, line 21, with the following amended paragraph.

As used with acoustic sensors, the waveguide materials, immobilization materials, capture agents, etc. used on the sensors may be deposited by any suitable technique or method. Typically, it may be preferred that such materials be delivered to a substrate in a carrier liquid, with the carrier liquid and the materials forming, e.g., a solution or dispersion. When so delivered, examples of some suitable deposition techniques for depositing the materials on a surface may include, but are not limited to, flood coating, spin coating, printing, non-contact depositing (e.g., ink jetting, spray jetting, etc.), pattern coating, knife coating, etc. It may be preferred, in some embodiments, that the deposition technique have the capability of pattern coating a surface, i.e., depositing the materials on only selected portions of a surface. U.S. Patent Application Serial No. 10/607,698, filed June 27, 2003 (now U.S. Patent No. 7,175,876), describes methods of pattern coating that may be suitable for use in connection with the construction of sensors according to the present invention.

Please replace the paragraph beginning at page 51, line 1, with the following amended paragraph.

In some embodiments, (such as those described in, e.g., PCT Patent No. [[_____,]] PCT/US2004/042382, filed December 17, 2004 titled "Acoustic Sensors and Methods", filed on even date herewith ~~(Attorney Docket No. 60209WO003)~~, and others), some materials may function as both waveguide material and immobilization material for secondary capture agents on an underlying substrate. In other embodiments, the same materials may function as waveguide material, immobilization material, and capturing material. In both of these variations, the materials of the present invention may preferably be deposited on an

underlying substrate that is, itself, effectively insoluble in the carrier liquid such that the carrier liquid does not adversely affect the underlying substrate.